

Text Complexity Analysis of

Wildlife Species Provide Clues to Spread of Antibiotic Resistance in Africa (*title*)

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Recommended Complexity Band: 9-10

Qualitative Measures

Meaning/Purpose: (*Briefly explain the levels of meaning (Literary Text) or purpose (Informational Text.)*) The purpose of the article is to share new research about how species in Africa are often also resistant to the same antibiotics humans are. Scientists are trying to determine how the antibiotic resistant genes are being transferred.

Text Structure: (*Briefly describe the structure, organization, and other features of the text.*) The article is written in a sequential scientific manner. The authors discuss the steps they took and the populations they sampled. Finally, they discuss their results and possible further research.

Language Features: (*Briefly describe the conventions and clarity of the language used in the text, including the complexity of the vocabulary and sentence structures.*) The vocabulary and sentence structure are fairly complex. The article uses many domain-specific words (*antibiotics, microbes, E.coli, multi-drug resistance, sediment, niche, antibiotic resistance*) and academic terms (*arsenal, attributes, apparent, ubiquitous, consumption*).

Knowledge Demands: (*Briefly describe the knowledge demands the text requires of students.*) Students will need a strong understanding of bacteria and antibiotics. It would benefit students to also understand how bacteria are able to transfer genes to each other so that antibiotic resistance is transferred easily. In addition to those, a basic understanding of ecology and food webs is essential.

Text Description

Briefly describe the text: The article describes how researchers from Virginia Tech and the University of Sydney tested for resistance to 10 antibiotics among 18 wildlife species and cattle in Botswana. The results from the tests showed that antibiotic resistance is being transferred to mostly carnivores at the top of the food web. Animals that show multi-drug resistance are crocodiles, leopards, hyenas, hippos, baboons, and warthogs. There also seems to be a correlation to drug resistance and aquatic life, but only certain species. Further research should be conducted in order to understand how the resistance moves across landscapes.

Quantitative Measures

Complexity Band Level (provide range): 11-12

The text falls in the upper range of the above grade band according to a quantitative reading measure.

Considerations for Reader and Task

Below are factors to consider with respect to the reader and task.

Potential Challenges this Text Poses:

The biggest challenge to understanding this text is the required prior knowledge: basic understandings of ecology, bacteria, antibiotics, and bacterial transformation. Struggling readers may need assistance with science vocabulary as well as the academic terms.

Recommended Placement

Briefly explain the recommended placement of the text in a particular grade band: The quantitative measure puts this text at the 11-12 level. While there are some challenging vocabulary words, most of the article is straightforward. As long as students have a basic knowledge of microbes, ecology, and bacterial transformation, the 9-10 grade band is recommended.